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Abandoned Farms and Wasted Forests.

THE newspapers and magazines of the country have given space during a year or two past to so much discussion of various questions relating to the abandoned farms of New England and some of the other Atlantic states, that very little which is new can now be said of any phase of the subject. A writer in a late number of the *Country Gentleman*, however, presents some views which are worth considering. This correspondent, Mr. Tom Ford, of Maine, has been examining the general subject for many years, and four years ago he visited many of the abandoned farms in New Hampshire and familiarized himself with all the circumstances by personal investigation and inquiries of the inhabitants. He was then so thoroughly convinced that these farms could be profitably reclaimed that he published a series of articles and interested real-estate agents in a project to sell them to well-to-do city residents, to be used by them as places of summer resort. He showed that a man could pay for a New Hampshire farm and the repair of its buildings and keep his family there from June to October every year for the same money that it would cost to take his family to Old Orchard Beach or Bar Harbor for two weeks. Many people were induced to examine the land, but very few bought any, because they considered it too lonesome, too far from routes of transportation, or for other reasons.

His study of the history of New England agriculture has led Mr. Ford to the conclusion that the New England farmer a hundred years ago was not a farmer after all. It is true that he raised hay, oats, potatoes, corn, beef and pork, but although he worked all summer to produce these, because he could do nothing else, he really received no adequate return for his labor and laid up nothing from this source. His wood-lot was his true source of income. To this his thoughts and energies were directed and into it he cut deeper and deeper every year. The logs and bark, the staves and shingle-stuff, the hoop-poles and the cord-wood brought him in all the money he had, and the produce of his farm was sapped to furnish supplies for his oxen and men. When his forest was cut away, half his income was gone. As his land was cleared and he had more to cultivate, horses were needed to take the place of oxen which could live on hay and grass and would gain $50 in value during the year. With the more expensive animals and machinery there was no corresponding increase in his income, and after making a losing fight for half a life-time the owners of the farms abandoned them and went out to work by the day. Old methods of doing farm-work by hand would not pay; the farms were too small to warrant the use of improved machinery; market-gardening was not possible where there was no market and the exile was inevitable.

Mr. Ford's solution of the abandoned-farms question is to let them remain abandoned. This sounds like a cruel decree of fate, but some of the conditions noted are worth considering. It is an expensive and often an impracticable task to bring up to its original productiveness a farm whose fertility has been exhausted. It is cheaper in such cases for the owner of such land to turn his back upon his impoverished acres and settle on the virgin soil of the west. And then the tillage of these steep and stony hills is laborious and expensive. Fifty acres of Corn can be raised and harvested on the smooth prairie as easily as five acres in some of the hill towns of New York and New England. The disadvantages of early and late frosts and bleak winds on these elevated lands, which materially shorten the growing year, are also to be considered. Altogether, one who attempts to support himself and rear a family out of the hungry soil of a rough hill farm in New England is to be commiserated.

And what is to become of these abandoned lands? One way is to leave them to nature herself. As the houses and barns tumble down the barren fields will grow up with bushes, and by and by the forests will come in where they flourished a century ago, and the roots of the trees will draw up from the depths of the soil the mineral wealth which will again make the land fertile. A still better way, even with this view of the case, is to assist nature and hasten the time when the land will be occupied by profitable timber. In many cases the scrubby growth when left to itself will require generations before a paying crop of wood is produced; but a practical forester would soon have the hills covered with wood which would be constantly growing into money.

It may be questioned whether this is the wisest treatment of most of the abandoned farm-lands in the older states, but certain it is that it was a mistake originally to cut away the timber from many of the rugged hills which have been cleared for plow-land. The crops that are wrung from such soils usually cost as much as they come to, and if the labor and expense which their cultivation demanded had been put upon smoother and more fertile land, the net profit from agriculture proper in the course of years would have been greater, while the forests, if properly managed, would have yielded regular crops and would have continued in full productiveness, so that both wood-land and plow-land would have increased in value.

In the complex relations which exist between the forest and the farm there are many points upon which, with our present state of knowledge, we cannot speak with confidence. We are not able to measure accurately the effect of forest-areas upon adjacent cleared land in modifying the winds of summer or of winter, in mitigating extremes of heat and cold, in distributing the annual supply of water. We can only make rough estimates of the effects of forests upon birds, insects, fungi and other animal and vegetable growths which may be helpful or harmful to agriculture. But it certainly is wasteful practice to destroy the forests on lands which can produce nothing else with profit, and yet this squandering of our inheritance is going on to-day in much of the Appalachian region as rapidly as if there was not an abandoned farm in all the country to sound a warning against such improvidence.

The Corstorphine Sycamore.

THE great tree, which is represented in our picture on p. 205, is one of the most famous in Scotland, and stands in the old Midlothian village of Corstorphine, near Edinburgh. It is locally called the Corstorphine Sycamore or Corstorphine Plane, but is neither a Plane nor, of course, a true Sycamore. The name Sycamore, rightly belonging to a Fig-tree (Ficus Sycamorus), is, as the readers of Garden and Forest have more than once been told, popularly applied in this country to the Plane-tree, and in England to the Sycamore Maple, because of a general resemblance which the leaves of these trees bear to those of the true Sycamore. As the Corstorphine tree is a Sycamore Maple (Acer Pseudo-platanus), the fact that it is commonly called a Plane as well as a Sycamore seems to show that, in Scotland, this special matter of vernacular nomenclature is even more confused than elsewhere.

The tree is a remarkable one, not only because of its great size and the tragic story connected with it, but for horticultural reasons also. "Its chief characteristic," says a local writer, "is the very remarkable color of its young leaves in early spring, as they do not show the tender green-yellow of other trees of this species, but a rich, glittering yellow—a tint so striking to the eye as to attract by its beauty and strangeness from a great distance." Indeed, this yellow tint must persist with more or less brilliancy throughout the summer, for in Loudon's *Arboretum Britannicum* mention is made, under the heading Acer Pseudo platanus, of a variety called Flava variegata; this variety is described as "the yellow variegated Sycamore or Corstorphine Plane, with leaves variegated with yellow," and we are told that "the original tree stands near an old pigeon-house in the grounds of Sir Thomas Dick Louder, Bart., in the parish of Corstorphine, near Edinburgh." Thus we see that the Corstorphine tree has been produced in English nurseries as a well-marked ornamental variety.

As much of the history of the parent tree as is known may be read in a book called *A Midlothian Village*, written and illustrated by a local artist, Mr. G. Upton Selway, to whom we are also indebted for the photograph which is here reproduced. From the year 1376 until the end of the seventeenth century the lords of the manor in this locality were the Forresters of Corstorphine. Of the castle of this family, says Mr. Selway, not one stone now remains upon another; but a pen-and-ink drawing of its ruins, made in the year 1777, shows that it was much larger than the usual Scotch manor-house of the sixteenth and seventeenth centuries. A map of the same date shows that the approach to it from the east was through an avenue of trees, and the Corstorphine Plane appears to be the sole survivor of this avenue. It has sometimes been called the largest tree of its kind in Scotland, but this, says our authority, is an exaggeration of its size, which, nevertheless, is remarkable. Near it, as Loudon tells in his *Arboretum*, stands an ancient dove-cote. This, says Mr. Selway, "resembles other buildings of its class built in the sixteenth and seventeenth centuries. It is a fine specimen of a circular dove-cote, with entrance from the north, built to accommodate one thousand birds, and is, considering its exposed situation, in very good preservation. These buildings were formerly considered of great value when much attention was bestowed on the housing and breeding of pigeons, they being held in high esteem as food when the raising of poultry was attended with greater risk than it is now, owing to the dangers of those uncertain times."

The tragic story which adds interest to this tree is a well-verified tale of comparatively recent date. James Baillie, second Lord Forrester, having taken an active part against the Commonwealth, his estate suffered at the hands of the English troops, and Cromwell exacted from him a fine of £2,500. His affairs thus became involved and his estates heavily burdened; he consoled himself by a career of drink and profligacy. The sister of his wife, who had died from the effects of neglect and abuse, hearing that Lord Forrester had spoken evil about her, demanded a meeting, which took place on the night of August 26th, 1679, near the old dove-cote. Exasperated by his drunken abuse, the woman murdered Lord Forrester at the foot of the Sycamore. For this crime, after many escapes and adventures, she was beheaded in Edinburgh. The story also tells that Lord Forrester was believed to have buried treasure at the foot of the tree, and that his ghost kept guard over it.

Treatment of Waste Lands in the Low Countries.—II.

THE great sandy formation which covers the largest half of the Netherlands passes out of Holland into Hanover, and stretches entirely across Northern Germany into Russia, the medium level of the whole district being only about fifty feet above the sea, and nowhere rising above three hundred. It is geologically very ancient, and its surface is marked by foreign rocks, which lie scattered over its surface, supposed to have been transported thither by icebergs from Norway and Sweden, in some previous geological epoch. This formation makes the principal part of northern Europe one great sandy plain, with very little landscape beauty, except that which arises from great green stretches overhung with a vast and ever-changing sky, which have served as an inspiration to a race of landscape artists, who have rendered with Dutch fidelity the features of their country. "Les accidents du pays," says L'Esquirol, "sont dans le ciel," but these apparently meagre details have been enough for Hobbema and Rüysdaet and Cüyp to work with, in producing their immortal canvases. Alternating with this sandy district in Holland, as well as in Belgium, are extensive heath and peat lands, which afford another example of the way in which persistent industry can overcome obstacles in husbandry. These peat-beds have been worked for five hundred years, so that the deposits in many cases have been entirely exhausted; but, undismayed, the persistent Dutch farmers drain the holes by pumping, and put them under cultivation, the basis being clay, which is capable of being converted into a good soil. It is not uncommon to find at the bottom of these excavated basins the remains of old forests; but what other people would think of making farms in such cellars as these and by such tedious processes? They begin by trenching the beds, in which the peat is only fit for use after eight years, the deposit being often more than thirty feet in thickness, and only capable of removal by very slow degrees. This peat-cutting, however, is a great branch of industry in Holland, for it is the only fuel the country produces, there being no coal, and but a very limited supply of forest. The growth of peat is here still in progress, and the same curious phenomena are still to be observed that were noticed by Pliny in the time of the Roman occupation. For example, fields are still found floating upon the water, and rising and falling with it. The Dutch maintain that the whole town of Dort, a large and flourishing place, shifted its location during one of the inundations. During another, a field, on which ten or twelve cows were feeding, was drifted across the Dollart, a broad sheet of water many miles in width, which forms the boundary between Holland and Hanover, and fastened itself on the opposite shore in a foreign country, without the loss of an inhabitant.

The theory which prevails in regard to these peat-beds is that they have been formed by the growth and gradual destruction of aquatic plants, growing in shallow pools and lakes, forming vegetation which originally floated on the surface of the water and finally attached itself by its roots to the bottom, extinguishing the sheet of water by transformation. But it is in the heath lands of Holland that the greatest results have been achieved by industrious and ingenious exploitation. As late as 1842 they were considered nearly valueless, so that in that year the state sold about 60,000 acres at sixteen or seventeen cents an acre. These lands, subjugated by a regular, though varied system of cultivation, have been so successfully handled, that twelve years after the original sale 20,000 out of the 60,000 acres were resold for nearly two dollars an acre, and since then some of them have brought as high a price as ten or fifteen dollars an acre.

The methods adopted with these waste lands are various. One is sheep-feeding on such parts of the ground as admit it; another is to shave off the sod, pile it in heaps in the sun to dry, burn it, and dress patches with the ashes or spread them on the contiguous sandy lands.

But the favorite method of reclaiming both heath and sands is the planting of forests of Firs and Pines, which is done with the extraordinary patience that characterizes this indomitable race.

Though the profit is slow in coming in, it is found, as we find it here, to pay in the long run. The seedlings, a year old, are planted at the rate of 13,000 to 14,000 to the acre. They are first pruned in the seventh year; afterward every two years, the trimming paying the expense. At the end of twenty years they are cut for hop-poles; at twenty-five years for supports for galleries in coal and other mines. In fifty years they furnish timber for small buildings, and then the land is finally cleared off and regular cultivation is begun, the soil being by that time fit for working. Poor lands treated in this way are estimated to yield an annual product of four or five dollars a year per acre during the process.

The ancient method of treating the heath, which was introduced into Holland some two centuries ago, was copied from the Tartars, who have practiced it from time immemorial on the plains of Asia. This consists in burning the sod over vast tracts at once. At times this is done to such an extent that the air is filled with smoke for hundreds of miles, as in the burning of our great forests. After this, the ground is merely harrowed and sown in buckwheat or other grain, of which the product is twelve or fifteen bushels to the acre. The land thus treated can be cultivated for about seven years, yielding for the first three years a good harvest. Then the crop begins to fall off, and in three or four years more it dwindles to little or nothing, and the land is abandoned. After resting for twenty years, it is found to be in a suitable condition to burn again. In Asia the Tartars wander back and forth over the immense steppes of lower Siberia and northern India, moving to another tract when one becomes exhausted. These wandering races have been known to remote ages, and isolated bands of them drift into Europe and form a valuable proportion of the laboring population of Russia. But in the rest of Europe, and more especially in diminutive Holland, these larger features of heath-cultivation are now wanting.

These pictures of struggling husbandry on sterile soils are by no means without their use. They afford an instructive lesson to the patient cultivator of stubborn and unproductive lands, who may learn from them that, however great his drawbacks, there are other people with greater ones. They teach, also, that there is no piece of soil so bad that it cannot by skill and industry be made to produce some kind of a crop which will repay its possessor for exercising his intelligence in its management.

Notes of Mexican Travel.—III.

ON THE TAMPICO BRANCH—CONTINUED.

THE hacienda of Tamasopo is situated on the second bench above the lowlands bordering the Gulf, at an elevation of 1,000 feet. It is in the zone of greatest rainfall. The winds, heavily laden with moisture, which arise from the Gulf, are repelled from the heated lowlands, to precipitate on these mountains torrents of rain, as their temperature is lowered by their ascending into cooler regions of the air. Yet the temperature of Tamasopo, though a little lower than that of the coast, is still a tropical heat; and, from conditions of so great heat and moisture results a vegetation of great luxuriance. The forests, composed of numerous species, are thick, the undergrowth beneath them is dense, and trees and shrubs are bound together by clambering vines to form an almost impenetrable jungle. Each large tree, with huge spreading branches and leaning trunk, it may be, becomes a garden of plants. On its rough, mossy surface root Ferns, Orchids, Bromeliads and Cactuses; and, lifted thus into the air and light, they thrive apace. Not epiphytal plants alone may be seen in such situations, but almost any herb or shrub, even, which grows in the neighboring soil. Thus, on the branches of Oaks, and twenty feet above the soil, I have seen in flower rows of Dahlias, Begonias and other plants.

The most abundant tree of these tropical forests is doubtless a Fig, Ficus Segoviæ, with smooth, gray bark, and often of vast size, especially when growing beside streams. Its leaves are lanceolate, smooth and shining; and it sheds at different periods throughout the year profuse crops of fruit, which is round, and varies from three-fourths of an inch to an inch and a half in diameter. It is upon the fruit of this and other Wild Figs that pigs, peccaries and monkeys largely subsist. The most common Oak here is Quercus germana, which bears acorns two inches long. Dendropanax arboreus, symmetrical in form and bearing attractive foliage and fruits, is one of the most interesting trees here; and Banara Mexicana is pretty when covered with white berries. But to enumerate all the arborescent species of these forests would be tedious, were it possible; and I will only mention Xanthoxylum Pringlei, Watson, and Clethra Pringlei, Watson, as discoveries.

If it were hardly possible to mention all the trees of this region, what can I say for the shrubs and endless variety of herbs of Las Canoas and Tamasopo, and of the long cañon connecting these, the pursuit of which occupied me for many weeks of two summers? I am sensible that the species accessible from the railroad, which has opened a way through mountains and jungles, is far from being exhausted.

From Tamasopo to the station of Rascon the road threads valleys and runs between wooded hills and a river-bank. The clear blue water shows through gaps of the thickets covering the river-banks, and here we first see clumps of a giant Bamboo, in each clump five to ten stalks, every stalk four to six inches thick, a gracefully spreading plume twenty to forty feet high. Scattered Palm-trees soon appear, and as we near Rascon we are running through a forest of Palms, straight, slender shafts, thirty feet high, bearing spreading heads of broad leaves. Beyond Rascon, as far as Micos, are more Palm-forests and Bamboos, and rivers and swamps and jungles alternating with open meadows, which lead back between hills whose sides are grassy glades and whose summits are covered with Oaks. Meadows and glades and mountain-tops—all are deer-parks; and the Mexican tiger, the puma, prowls through the less-frequented wilds of all this region. The few haciendas being at a distance from the railroad, few people are seen; rarely there is seen a hut, a thatch of palm-leaves raised on posts, the sides being left open, or, at best, being filled in with wattles of cane-stems.

At Micos we are beside a larger river, the Conception, and among other mountains. Butting crags, 2,000 feet high, hang over us on either side. Between these, and above the roaring river, we pass through the mountain-notch to descend to the lowest bench of the highlands. As we emerge through the gateway our eyes turn from the wide wooded plain before us to look back on the river and see it plunging through a mile of its course in most beautiful cascades, where twenty white cataracts alternate with reaches of still water. To descend to the river-side and stand amid the spray and roar of some of the grander falls, to look into the still, limpid pools of green-hued water, to observe the flood, where greatest force is spent, making deposits of calcareous tufa, thus building up the rim of its pools, and from the verge of the falls projecting chutes to convey the falling torrents further and further out—the more intimate acquaintance thus gained yields deeper interest. Wet walls in the spray of the falls were hidden by masses of Aspidium trifoliatum; and out of the tufa was growing, mostly submerged, a strange plant, Erigeron heteromorphus, Rob., n. sp. Its long and finely dissected leaves moved in the flowing water like tresses of hair, and its abundance contributed to the green hue of the water.

Crossing the last bench, mostly covered with small trees and shrubs, Croton eleagnoides, Watson, n. sp., being the most numerously represented of these, and, on account of its silvery foliage, the most conspicuous, we come to the last mountain-gap, and pass through it by a tunnel in one of the cañon walls. Now we are on the side of a low mountain, and are overlooking the lowland plain, which is about fifty miles wide from the mountains to the coast, and on this side is only two or three hundred feet above sea-level.

Two or three miles below the last tunnel, where the grade has nearly reached the plain, we come to the fountain caves of the Choy River. This spot has been a favorite haunt of mine; and not a few have been the new or choice plants yielded me by its ledges of lime-rock. An iron bridge spans a chasm in the mountain-wall. Through chambers in the rock comes the roar of waters far beneath us. We look down through an opening under the railroad-ties and see a half-lighted cave and a dark pool occupying its floor. From the railroad we scramble down a steep path over the rocks, and enter the principal cave. We creep down its shelving ledges among Ferns and stand beside the pool. On its farther side, in the inner wall of the cave, open the dark caverns, from which this river issues—"caverns measureless to man." We feel as though we had come upon the river Styx, and are inclined to watch the inner portals for the coming of Charon and his skiff. Under a low, broad archway and over a rocky bed the river tumbles out into the sunlight. We clamber back out of the cave and get down to the river to find its waters clear and pure, but of a strange blue color. Other caves of the series we try to explore, but find them inaccessible, and only succeed in disturbing their occupants, which circle around us, screaming hideously. In the openings of the upper chambers, however, we notice sticks laid by, which indicate that the natives let each other down from above by means of ropes and secure the young birds to sell. In the limestone formation of these mountain-ranges such caves are common. There is a most interesting one with several grand, high-vaulted rooms

just above the last tunnel, and into openings among ledges streams not rarely disappear and are lost to human knowledge. From the Choy, past the hacienda of Las Palmas to Tampico, there is little of interest along the road. There are seen a few natural meadows and a few lagoons; but only a few clearings have been made, and we see few people. I was disappointed to find the forest-growth comparatively small; but the cause of this may be found in a lighter rainfall than occurs above. On the banks of the great rivers, the Panuco and the Tamesi, there are heavy growths not to be seen from the train. As the day is closing, Tampico, with its tiled roofs and white walls, overtopped by Palms, comes in view, and our journey is ended.

Charlotte, Vt. *C. G. Pringle.*

Plant Notes.

The Table Mountain Pine (Pinus pungens).

THIS notable Pine, discovered by the elder Michaux in North Carolina on the mountain from which it gets its common name, was thought by him so rare as to be in danger of extinction by the woodman's axe and forest-fires, but in this opinion the famous explorer was mistaken. We now know that the territory over which it is spread is far larger than he had imagined. Not confined to the Carolinas, it extends much further northward along the Appalachian ranges, and has been observed in Virginia on the Blue Ridge near Charlottesville, and on the Massanuttan chain west of Luray, and in Pennsylvania, on the eastern slopes of the Blue Mountain at Two Top, close to the Maryland line, and on the Schuylkill River at Port Carbon, where it still flourishes, as it did a century ago, in the place referred to in his Journal (page 104) by Michaux himself, who does not appear, however, to have then recognized it as his Table Mountain tree. In the central counties of the state, it is more abundant and grows on the flanks of the Tussey and Stone Mountain ranges in the counties of Blair, Huntingdon, Centre, Mifflin and Union. Here it attracted the attention of the late Frederick Noll, of Lewisburg, and was described and published by him as a new species under the name of Pinus montana.

There are also three other outlying stations worthy of special notice—one, about midway between Washington City and Fredericksburg, Virginia, chronicled by Michaux in his Journal (page 104); another at McCall's Ferry, Lancaster County, Pennsylvania, just discovered by Mr. A. A. Heller; and a third, reported a few years ago by Dr. G. N. Best, near Rosemont, Hunterdon County, New Jersey. The existence of this mountain Pine in such limited patches on the lowlands, distant one or two hundred miles from any of its kindred, can only be explained by the supposition that a storm-wind wrestled with some sturdy mountaineers, the scales of whose cones were just ready to open, and, whirling aloft a mass of winged seeds, carried them to these remote points and dropped them there at a time when the conditions were favorable for their germination and early growth. That currents of air do perform similar feats is beyond question. The two-lobed pollen-grains of the long-leaved southern Pine (P. palustris) have been thus rapidly transported some four or five hundred miles from South or North Carolina, in the middle of the month of March, and deposited in considerable quantities, along with snow, at sundry places in eastern Pennsylvania, and Dr. Engelmann has recorded the occurrence of the same thing at St. Louis and explained it in the same way.

A native of the Atlantic sea-board, and hence at home in our climate, the Table Mountain Pine thrives wherever it is planted in the northern states, and certainly deserves more favor from the landscape-gardener than it has yet received. Although surpassed in breadth and altitude by other species of the genus, the sight of it, when fully developed, leaves upon the mind an impression of massiveness and durability by reason of the unusual stoutness of its spreading horizontal limbs. The wood is solid, heavy and rich in turpentine. But its chief glory lies in its cones, which are of a goodly size, with very thick, hard, shining scales, tipped with strong prickles. The largest and finest are produced on young trees six or seven feet high, or even less. On the branches of the full-grown trees they are smaller and occur in clusters of three or four (sometimes seven or eight), and these clusters are persistent one after another in succession for a number of years. None of our eastern Pines possess, at least in the same degree, this habit, which, in connection with the beauty of the cones, renders it an object of peculiar attraction in a park or arboretum.

Lafayette College, Easton, Pa. *Thos. C. Porter.*

Foreign Correspondence.

London Letter.

THE Ghent Exhibition took place this week and appears to have been as great a success as on previous occasions. Although held in Belgium every five years, this great exhibition of plants is of almost cosmopolitan importance, and, in England, at any rate, excites as much interest among horticulturists as if it were an English show. This is, of course, partly due to the fact that Belgium and England have, for many years, been in the van of horticultural progress, and have been of considerable aid to each other. The Belgians are gardeners of the first rank, and the beautiful old town of Ghent contains many nurserymen, some of whom have a famous place in the history of horticulture, and their establishments are as rich in interest for botanists as they are for horticulturists.

The Quinquennial at Ghent has, for many years, stood unrivaled as a plant exhibition. There were Palms, Cycads, Ferns, Orchids and stove-plants of all kinds. The Azaleas at Ghent are always exceptionally well grown and abundantly represented. The enterprise and zeal of the exhibitors are extraordinary, some of them bringing huge specimens, tons in weight, to compete for honors merely, the medal or cup awarded as a prize being of sentimental value only. It is the same with new and rare plants. In this division exceptional interest was added this year, owing to an arrangement between Messrs. Linden, of Brussels, on the one hand, and Messrs. Sander & Co., of St. Albans, on the other, to try conclusions in the class for six new plants. It was generally known that this contest would be keen, and the event had acquired almost a sporting flavor. Messrs. Sander & Co. won the premier prize with the following plants, described by me in my last letter: Alsophila atrovirens, Strobilanthes Dyerianus, Dracæna Godseffiana, D. Sanderiana, Alocasia Watsoniana and Ludovia crenifolia. The plants exhibited by Messrs. Linden were a selection of those shown by them last year at the Temple Show of the Royal Horticultural Society, and noted by me in a letter last May. They were Tradescantia reginæ, T. superba, Stenandrium Lindeni, Hæmanthus Lindeni, Smilax argyræa and the new Orchid, Eulophilla Elizabethæ. This last is a plant of extraordinary interest and beauty. It was named by Mr. Rolfe, at Monsieur Linden's request, in compliment to Carmen Sylva, the Queen of Roumania, and a fine figure of it was published in *Lindenia* last year, t. 325. It is like a large Eulophia, with white flowers, a yellow lip and rich crimson purple scapes, the same color being conspicuous on the back of the flower segments. The plant exhibited at Ghent this week was called by a competent judge "one of the most remarkable, if not the most remarkable, in the whole show." Among the other new plants which won honors, were the grand new Oreocyclus Iris Lorleti; Hypolytrum Schraderianum, a fine stove Cyperus-like plant, recently noted by me; Richardia aurata, sent out last year as a hybrid between R. hastata and R. albomaculata, and which has hastate leaves, green, with white spots and creamy yellow spathes. It has nothing to do with R. Elliottiana, with which it was stated to be identical, being really an inferior plant. Nicotiana colossea variegata, with large white variegated leaves, was awarded a silver medal. An interesting Gesneriad, from the Kilmanjaro, in east Africa, was exhibited by Herr Wendland, Director of the Hanover Botanical Garden. It bears the curious name of Saintpaulia

ionantha, and has the habit and appearance of the Pyreneean Ramondia. A figure of it is to be published shortly in *Gartenflora*. Senecio sagittifolius, the big-leaved, handsome Groundsel, lately noted by me as flowering at Kew, was also exhibited in flower by Herr Wendland.

AZALEA ANTHONY KOSTER.—This is an exceptionally fine variety of Ghent Azalea, its flowers large in compact, well-formed trusses of a rich orange-yellow color, clear and bright and beautiful. It is said to be the result of a cross between A. mollis and A. Sinensis. Some plants of it were shown this week by Messrs. Lane, of Berkhamstead, and they won universal admiration, the Royal Horticultural Society awarding it a first-class certificate. In England every year is bringing forth new and improved varieties and crosses of hardy Azaleas. There are no shrubs of greater value in the garden than these. Mr. Anthony Waterer is, perhaps, the most energetic raiser of new varieties. He also has numerous crosses between the Ghent Azalea and A. mollis, some of which are very fine and distinct. The red-flowered varieties of A. mollis are among the best of the recent productions of the famous Knap Hill nurseryman.

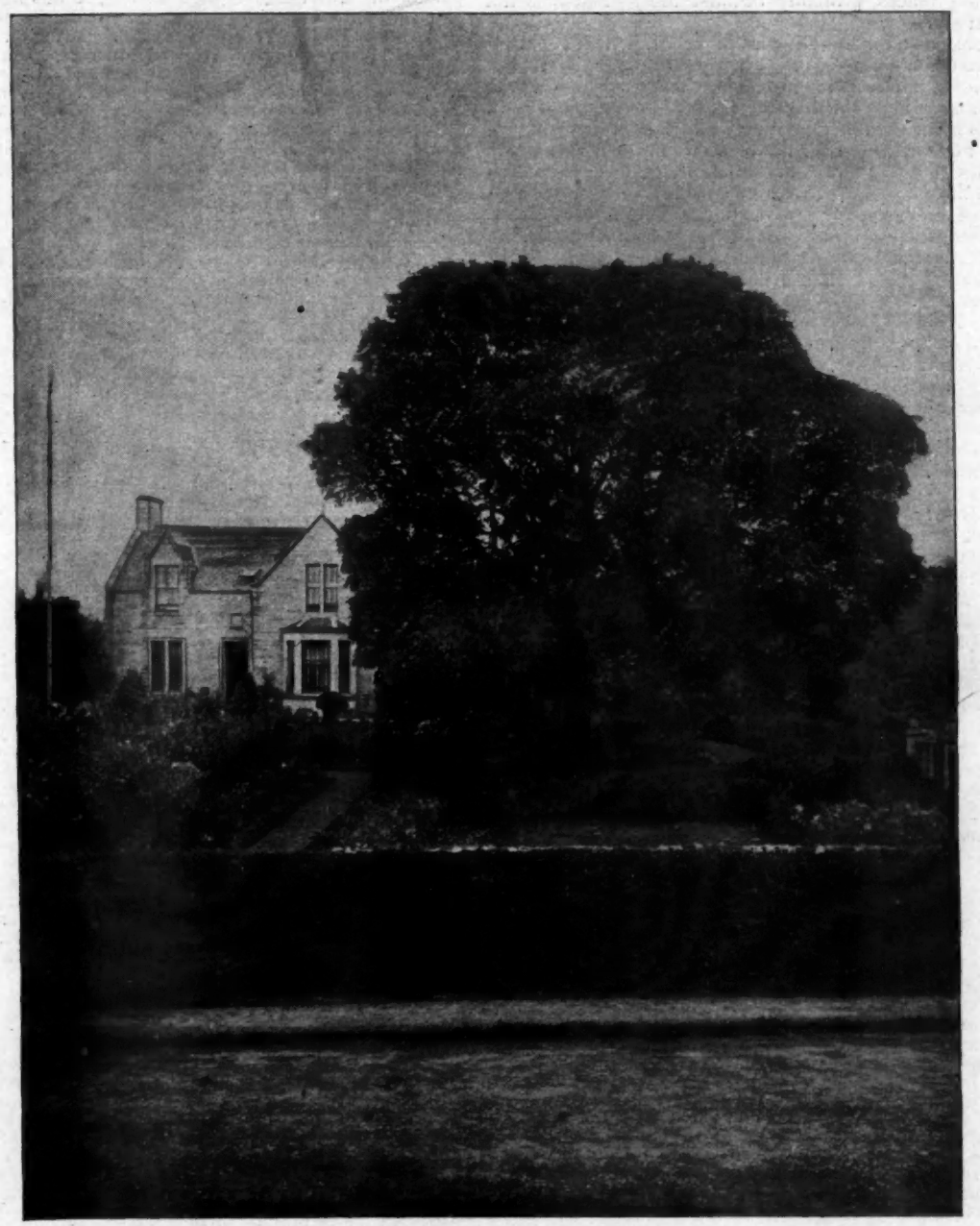

Fig. 32.—Sycamore Maple (Acer Pseudo-platanus), near Edinburgh, Scotland—See page 202.

PYRUS JAPONICA, var. CARDINALIS, received a certificate last week, specimens of it being exhibited by Mr. A. Waterer. It is remarkable for the large size and rich cardinal-red color of its flowers. We have now a considerable number of varieties of this, one of the very best of the many good garden-plants which we owe to Japan. A collection of sorts was shown by Messrs. Veitch, including the type, the

white variety (P. Japonica alba), the rich deep crimson, large-flowered variety known as atropurpurea, and the rose-red form named rosea. They also exhibited P. Maulei, which is, perhaps, only a variety of P. Japonica. Thus we have varieties with red, pink, crimson, white, salmon and bright cardinal flowers. They are worth growing as a group in any good garden. I have seen the type used as a kitchen-garden fence. At Kew it does not flower as freely as in many places, probably because the soil here is not the most suitable.

Daffodils.—Kew has shown this year how valuable Daffodils are when planted in large masses for the production of bold landscape-effects in spring. On the lawns among the grass, in large beds skirting the principal paths, and as a carpet to loose shrubberies, they were planted by the thousand last October, and for the past month they have made a glorious show. Some half a dozen large beds each contained a thousand bulbs, and every bulb bore one or two flowers of Emperor, the grandest of all the trumpet Daffodils; there were several equally large beds of Empress, the rival of Emperor in size and beauty of flower, and beds of Sir Watkin, Barii conspicua, Burbidgei, Countess of Annesley, and other equally large-flowered handsome kinds, all placed in positions where they tell with fine effect in the compositions from various points in the garden. A plantation of Firs, carpeted with Campernella (N. rugulobus), has been a waving sea of rich yellow and dark green. I consider this Daffodil one of the best of all spring-flowering bulbs either for beds or to cover large areas on the outskirts of woods, etc. It must be planted thickly, and as it is plentiful and cheap there is no difficulty in getting it in quantity. Grass-mounds clothed with thousands of flowers of Poet's Narcissus waving in the wind are most effective. This kind of gardening is easy, all that is needed being a broad method of treatment, massing in conspicuous positions, autumn planting and the selection of the sorts most suitable for the purpose. Kew has broken out in a new and useful direction by this development of spring gardening on bold lines. I have never seen the garden look more attractive, nor have I seen such crowds of interested visitors as we have had this spring. Yellow in the garden is always effective, and specially so in spring. The elevation of Daffodils from a position of obscurity to one of immense popularity is not, therefore, to be wondered at; one rather is surprised that the value of these plants was not more fully recognized in the garden long ago. It is curious that the French are amused at our taste for Daffodils, probably because yellow is not a favorite color with them.

London. *W. Watson.*

Cultural Department.

New Types of Fruit.

NEW fruits are rarely introduced unless they have some merit. They may not be of sufficient value to supplant any old variety, but their introducers, at least, believe that there is some vacant place for them or that they may create a new demand. Unfortunately, they often suffer from injudicious praise, and when they do not equal expectations they are too severely judged, and even their good qualities are not recognized. Professor Bailey has just been publishing an estimate of four new types of fruits, which have been the cause of much discussion, and in this bulletin of the Cornell Experiment Station he attempts to give a careful judgment of their quality.

The first of these is the Apricot Plum (Prunus Simonii), which was described and figured by Carrière in the *Revue Horticole* in 1872. The author considers it a distinct species of stone fruit, and not a hybrid. It has been strongly recommended for its fruit, and has been planted to some extent. When grown in California the fruit has sold in New York, Boston and Chicago markets at profitable prices. The sales may have been caused by the novelty of the fruit or its taking appearance. It may be that since the plant loves a dry climate the fruit grown in California has real merit. In New York, however, Professor Bailey finds the fruit worthless for orchard cultivation; he has never tried a specimen that he could call edible, and the tree is not productive. The fruit is very handsome in shape and color, and its long-keeping quality commends it. It is possible that if it could be hybridized with the Peach the offspring would be hardier than the Peach, while having some of the excellent flavor of that fruit. Prunus Simonii has merits as an ornamental tree, since its erect Poplar-like habit, early flowers and glowing fruits make it a conspicuous object.

The Japanese Wine Berry (Rubus phœnicolasius) was first described by Maximowicz in 1872. A plant of it was sent to Kew in 1875 from the Jardin des Plantes, and Sir Joseph D. Hooker described it as an exceedingly handsome bramble and said of the fruit that, "though eatable, it was mawkish." It was early introduced into this country under its proper name and sold by Ellwanger & Barry in 1881. Mr. P. J. Berckmans says that it was known in Holland for a generation before it was figured in 1877, and cultivated as a curiosity. Mr. Berckmans has known it for nearly fifty years. Professor Georgeson sent seeds of the plant to this country from wild bushes in 1887, and he described the fruit as of good size, firm and handsome, and sweet and delicious when ripe. The stock of these plants was secured by John Lewis Childs, and it was widely disseminated in 1890 as the Japanese Wine Berry. Professor Bailey has cultivated it and found the fruit to have little to recommend it, either in size, appearance or quality, although he is ready to believe that the species may eventually give us fruit of edible value. For the present he classes it among ornamental plants rather than among valuable fruit plants.

The Crandall Currant, which is a strain of Ribes aureum, found growing wild in Kansas, has promise as the parent of a new race of small fruits, although it is as yet too variable in the quality and productiveness of its fruit to be trustworthy. Many plants bear fruit little larger than those of the common Flowering Currant, and out of fifty plants originally received from its introducer by Professor Bailey less than one-fourth of the whole number proved profitable. If stock were propagated from the best specimens alone the Crandall Currant would soon rise in popular estimation. The fruits are large and handsome, firm, of good culinary quality, and the plant is thrifty. To some people the flavor is disagreeable, but others are fond of it, and if the stock were uniform the Crandall, even now, could be recommended as a good fruit for home consumption. As yet it has been free from attacks of the currant-worm. The species Ribes aureum, to which the Crandall belongs, has long been cultivated for its sweet yellow flowers.

A dwarf form of the June-berry known as Success was found growing in a garden in Kansas in 1873, and put upon the market five years later. On the experiment-station grounds at Ithaca plants set out in 1888 have yielded three good crops. They are not more than three or four feet high, although they have never been headed back, and they grow upon strong soil. The fruit ripens with early currants, and lasts nearly as long as the currants do. The berries resemble huckleberries in flavor and appearance, although they are more juicy and palatable than huckleberries. The plants are wonderfully productive and hardy. Professor Bailey endorses the judgment of Professor Alwood, of the Virginia Experiment Station, that the quality of the fruit ranks well up to that of the strawberry, and he considers that it fills a real need for a first-class small fruit which ripens just at the close of the strawberry season. The drawback to its cultivation is that the birds are attracted irresistibly by the fruit, so that it is necessary to cover the plants with mosquito netting and tie it on securely in order to save it. Professor Bailey considers this form of the June-berry specifically distinct from Amelanchier Canadensis.

Hardy Ferneries.

THERE are many situations in which it is difficult to make plants or grass thrive, owing to shade from trees or other causes. In city yards, too, where the surroundings are not under control, it is necessary to take these into consideration, and to plant such things as are likely to thrive. I have in mind a limited space at the back of a city house which was transformed into a most interesting spot by planting Ferns alone. Besides attention to moisture, these require hardly any labor after the planting is completed.

For situations of this kind the numerous Ferns of the eastern states should be depended upon mainly, as only the native Ferns are entirely hardy. Others, such as British species and varieties, can sometimes be used with advantage. These are distinct, in many ways, from any of our native kinds, the original type having been changed through the continued raising of seedlings and selection. The varieties of almost all the principal types have become so numerous as to tax the ingenuity of the raisers to name them. It should be noted, however, that British Ferns are not reliably hardy, and should be given a secondary position.

Many Ferns grow only on rocks, while others are found in stony soil; some are sub-aquatic, and, again, some favor rich black vegetable-mold. All Ferns, however, will thrive in mold, provided other conditions are similar to those in which they are found wild. The common Polypody (Polypodium vulgare) is always found growing in tufts on rocks where but little soil can accumulate. P. incanum is not unlike P. vulgare. It is only found in the southern states, though it is hardy in the east. It also grows in similar positions, and sometimes on trees where moisture is assured. These two species should be planted among stones to secure ample drainage, with very little organic matter about their roots. Cheilanthes vestita, another rare and beautiful Fern, also grows in the clefts of rocks. This is sometimes called the Lace Fern, owing to its elegant fronds; it is perfectly hardy. Camptosorus rhizophyllus, the Walking Fern, grows in similar situations, and is a most interesting Fern, peculiar to North America. Young plants are produced at the tips of each frond as they arch over and touch the soil; these take root, and the plant is thus propagated. Asplenium Trichomanes, the Maiden-hair Spleenwort, is a desirable Fern, though not common in cultivation; its culture is simple, similar to that of C. rhizophyllus. This is also the case with Wall Rue (Asplenium Ruta-muraria), a very small, but interesting, species often found on old walls and in clefts of limestone rocks. Old mortar rubbish should be added to the soil to insure its well-doing. These Ferns all need stones or rocks about their roots; they are of dwarf habit, and must not be associated with any of the more robust kinds, but should be planted in nooks by themselves. Though no elaborate arrangement of stones or rocks is necessary, they are a decided advantage in a fernery, and furnish a diversity of positions, and also assist in making a more natural and informal effect. The well-being of the plants must, of course, not be sacrificed for the sake of the rocks, and there must be a good supply of soil to contain moisture for the support of the plants, or failure is certain.

Among Ferns that should not be included in stocking a fernery is Struthiopteris Germanica. It spreads rapidly and should be confined where it cannot ramble at will and crowd out other Ferns. It is commonly known as the Ostrich Fern and is very handsome and most valuable for naturalizing.

Some Ferns need a great deal of moisture, such as Woodwardia Virginica, W. angustifolia, all the Osmundas, Aspidium acrostichoides, Dicksonia punctilobula and the Maiden-hair Fern (Adiantum pedatum). Among kinds that succeed well in drier positions are Aspidium marginale, A. Goldianum, A. cristatum, A. spinulosum and its varieties; also the species of Phegopteris, such as P. polypodioides, P. hexagonoptera and P. Dryopteris. The Hartford Fern (Lygodium palmatum) must not be omitted. Its climbing habit should be encouraged; it takes some time to become established and is of a rambling disposition at the roots. The Botrychiums and Ophioglossum are very interesting, owing to the bunch-like, fertile portions of the fronds which have given them the name of flowering Ferns.

There is one beautiful exotic Fern that should be known by all growers of Fern; this is a species from Japan, Asplenium Goringianum pictum. It is beautifully variegated with red, gray and green, and is quite hardy. But few forms of native Ferns, which vary from the types, are known in gardens. This is due to the lack of observation and interest in these plants. I found beautifully crested forms of two species which I was collecting. One plant, Aspidium marginale, was surrounded with numerous smaller ones, all of which were crested at the end of each division of the frond. If Ferns were more sought for, and cultivated, we should soon hear of seminal varieties exceeding their parents in beauty.

It would add much to the interest of a fernery if some of the native Orchids were planted among the Ferns. The conditions would be suitable for all the Cypripediums, Habenarias, Orchis spectabilis, Spiranthes, Goodyeras and Pogonia. Indeed, every species of native Orchid could be grown in such a situation, excepting, of course, the southern Epidendrum conopseum, which is epiphytal. The soil should be composed largely of decayed leaf-mold, with loam added. Fertilizers are unnecessary and would, in some cases, be injurious both to Ferns and Orchids. Two things only are necessary, shade and moisture, either natural or supplied in some artificial way. Exotic varieties may be added by way of experiment, and it would be very interesting to the grower and others interested in Ferns to know which are reliably hardy in the colder sections of the United States. Most Ferns die down in winter, and a top-dressing of leaf-mold would be of great benefit as a protection to the crowns and for nourishment to the roots. The catalogues of dealers in native plants give sufficient directions for planting.

South Lancaster, Mass. *E. O. Orpet.*

The Narcissus Season.

WITH only nine days in April without some rain, we have had at least an opportunity to test the Narcissi as wet-weather plants. They evidently luxuriate in moist cool air, and this seems to be an exceptionally favorable season. We had our first flowers early in the month, and varieties have come into flower slowly, and in the absence of hot days the blossoms have retained their freshness for an unusual time. Ordinarily we have a few hot days which hurry forward the flowering, and if accompanied by drying winds the Daffodil season passes with a rush. Narcissus poeticus has just opened, and a number of varieties are showing their spathes, so that we shall be favored with these beautiful flowers for quite two months. All enthusiasm aside, Daffodils are beautiful flowers, though there is much choice among them—a choice among great riches. Narcissi seem to have always been great favorites in England, and owing to the special interest awakened in the last fifteen years the varieties known have multiplied amazingly, as the native haunts have been intelligently explored for variations, and many zealous cultivators have devoted their attention to hybridization. New as well as good old varieties are still plants of price, showing that the popularity of the family is unabated. The enormous sales of these flowers reported in the English cities would explain the value at which bulbs of good varieties are quoted; in spite of their rapid increase, they evidently have a value as dividend producers. We are far behind the English in our appreciation of good Narcissi, as the catalogues of our best dealers only offer a limited selection of varieties, indicating that they are in a limited demand. At the ordinary florists' one seldom sees other than the commonest, and often flimsiest, kinds, and there is evidently room here for some enterprise, which would be well rewarded. One cannot go amiss in securing such kinds as Horsfieldii, Emperor, Maximus, Empress, Countess of Annesley, Ard Righ, Golden Spur, Scoticus, princeps, poeticus, ornatus, etc.

But let me suggest that too few amateurs grow collections of Narcissi in all the various sections. They are very interesting to any flower-fancier, and there is such an amount of material for selection that the interest is likely to extend beyond the purse. Barr, of London, or Hartland, of Cork, furnishes well-grown bulbs (which our dealers import to order) in great variety, and prices ranging from one penny to five guineas each, prices which bear no relation to their respective beauty. It will be the part of prudence and satisfaction to make the first plunge among the most moderately priced kinds, and buy the dearer as the collection needs addition in some form or note of color. In the Incomparabilis section it will be found especially that there are flowers to fill the entire gamut of color, from pallid white to deepest yellow in various combinations, and the notes are sometimes quarters, or even eighths, so closely have the varieties been differentiated. For me the beauty of the Narcissus consists not only in its pleasing forms, but in the softness and purity of color, and in this many of them are deficient. There are too many catalogued as pale sulphur, which is the ordinary euphemism for a washed-out sickly tint, bearing little resemblance to an honest yellow. Those flowers with medium tones of yellow are the most satisfactory, the deeper yellow of the Tenby Daffodil seeming as harsh as the paler ones are weak; still all these tints are somewhat varied by cultivation, with fertilization tending to coarseness. Size is dearly gained if the coloring is thereby injured, as it often is in the kinds with white perianths or those with orange-tipped cups.

Elizabeth, N. J. *J. N. Gerard.*

The Water Garden.—While the memory of the late severe winter is alive, it may be well to note that all the hardy Nymphæas survived in my shallow tanks, twenty to twenty-four inches deep, as they have in milder winters. It seems unnecessary to provide much depth of water to insure the safety of these plants. The tanks were covered after freezing weather had commenced with boards seven-eighths of an inch thick, which extended over the walls, as it is quite as desirable to protect these as the plants. I found at no time over four inches of ice formed, and I should be willing to risk any of the hardy Nymphæas in my tanks under a pot of water when covered. One of my tanks was closely covered, and the other was partly covered by a sash. In the former the fish and frogs all died, while in the latter they survived. I am not prepared to say that the difference in the light was the cause of the fatality, but I shall have a sash or two as part of the covering hereafter. As new tanks are being built at this time, the owners may be warned against using cemented tanks before washing out the free lime, which is very injurious to plants and

fish. Healthy progress is being made in water gardens, and their number is constantly increasing.

Elizabeth, N. J. *J. N. G.*

Pansies.—No florist's flower has been more improved during recent years than the Pansy. As with Carnations, Tuberous Begonias and Cannas, the effect of the work of the specialist is distinctly seen. The introduction of the giant Trimardeau strain, by Mr. Denys Zirngiebel, of Needham, Massachusetts, some eight years ago, created almost a sensation, and the popularity of the Pansy as a florist's flower may be said to date from that time. Pansies are offered for sale in all the leading cities of the country, from December until June, and no florist of any standing can afford to be without them. There are few flowers, especially in winter, which can be used in the same way, for dishes or shallow vases, and with a little green intermixed there can be nothing more appropriate for dinner-table decoration.

For mixed spring bedding the Trimardeau strain is rapidly displacing the once popular Odiers' International Prize. Except for lines and massing, where the bedding Violas are particularly effective, these Pansies are rapidly gaining favor in England. The hardiness of this new type had a thorough test last winter and came through in splendid condition. Cassier's strain, a more recent introduction, is scarcely as robust as the Trimardeaus, but affords a greater variety of colors, with smooth, rounded form and finer lines. While the shades in the latter are mostly blue, those of the Cassier's strain are principally yellow and white, in some respects resembling the white and yellow ground Pansies so common in England and Scotland.

Bügnot's, yet another novelty, in constitution and general characteristics resembles Cassier's, except that the red shades mostly predominate. This is the most popular Pansy on the market in Boston. The fine rounded form and distinct markings of the English and Scotch Pansies, unfortunately, find no favor here. In the show varieties, having mostly white and yellow grounds, the markings are sometimes most beautiful, and so clear and distinct that not a stain is visible on the ground color.

For winter blooming, seed may be sown any time in August in the open borders, and in September in a cool greenhouse, such as one would grow Violets in. I would not advise spring sowing, except in an emergency. Plants which have been raised in the autumn and wintered with the protection of light litter, are much to be preferred for spring blooming.

Wellesley, Mass. *T. D. H.*

Correspondence.

Spring in Virginia.

To the Editor of Garden and Forest:

Sir,—Taken as a whole, and compared with more inland regions, this shore-country is not beautiful. It is flat, and its vegetation is less varied and luxuriant. But its greatest lack is of green fields. I never realized before how largely the beauty of the spring is due to the verdure of pasture-lands, meadows or grain-fields. Here no cereals are grown. The meadows are still dry and yellowish, covered with the remains of last year's grasses. Some of the Corn-fields are being plowed; others still are unsightly with last year's stalks; and all of them, as well as the roadways, are of a doleful grayish white clay-color, quite disagreeable to an eye accustomed to the yellower color of New England's soil or the ruddiness of New Jersey's. Even a beautiful stretch of budding and blossoming woodland beyond such a foreground as is made by one of these fields loses much of its charm; and to see this country at its best one should undoubtedly see it when midsummer shall have persuaded tall tasseled crops out of the unpromising-looking soil.

Nevertheless, every region which is largely covered with woods must have charm; and here, in addition to wide stretches of woodland, we find some spots of peculiar and enchanting beauty. Just back of the long wide beaches the ground is often covered with monotonous groves of Pine. But in other places small fresh-water lakes lie not far away from the sea, encircled by forest, and between them and the beach are rolling expanses of pure white sand—of sand which looks exactly like the beach-sand, yet is partly carpeted with broad gray patches of Hudsonia, and here and there bears a group of ancient Hollies, all their branches bent sharply toward the south-west by the prevailing winter winds, and even flourishing masses of shrubs and creepers, overgrown with the Yellow Jessamine blossoms. Diversified by these green oases and sentinel Hollies, and flanked by stretches of verdurous woods, these shining white miniature hills and valleys are extraordinarily picturesque, especially when looking eastward, one gets, above their billowings, a glimpse of the sapphire sea.

A little farther inland the roads often run through richer woodlands, and it is here that the varying, contrasting colors of spring foliage may best be studied. The prevailing tree is the Loblolly Pine, whose deep dull green makes an excellent foil, as background or canopy, to the brighter tones of the deciduous trees. Much could be written about the beauty of the conspicuous flowering plants which are scattered through these woods—the Dogwoods with their layers of snowy white, clouding wide stretches in the open woods as though a little snow-storm had been arrested in its descent; the Red Buds, which two weeks ago spread clouds of deep pink against the clouds of white; the wild Crab-apples, which have now replaced the Red Buds with wreaths and streamers of paler pink; the Viburnums, sprinkled with white clusters, and the Yellow Jessamines, blossoming lowly on the bosom of the sand down to the very edge of the beaches, but, when they get a better chance, slinging themselves up in bright yellow garlands to the tops of good-sized trees. But any eye could appreciate the charms of these. It is the less conspicuous charms of the embracing leafage which are less commonly noted.

The brightest green is supplied to these April woods by the leaves, now nearly full grown, of the Swamp Maples. These are green with a vivid yellow greenness impossible to describe, yet here and there, at the ends of the branches, they shade into pinkish or russet tones, and the new shoots at the foot of the trees are sometimes bright bronze, sometimes bright pink, and sometimes a very bright scarlet. Next in the scale of color come the starry leaves of the Sweet Gum, which, after the Loblolly Pine, is our most common tree. As they first unfold, in little pointed bunches, they make an infinitude of bright spots on the gray branches, specially noticeable in the small plants which compose so large a part of the shrub borders of the road. But when they are a little older, so that they clothe instead of spotting the tree, they are just as bright a green, of a tone somewhat deeper and a quality more shining than the Maple-leaves.

Next in abundance come the Oaks. But there are several kinds of Oaks, and one kind is not like unto the other in glory, especially at this time of the year. Conspicuously different are the White Oaks and the Willow Oaks. The former bud, as every one knows, into little hanging clusters of grayish pinkish leaves, "squirrels' paws" for size and color and softness and fingery-ness. Seen close at hand on young plants or shoots, they are enchantingly pretty; and they make the most conspicuous effect of all when, in a more distant stretch of woodland, they are borne by large trees, then showing like a pale gray-green feathery mass against the dark rigidity of the Pines and the keen emerald greens of the Maples and Sweet Gums. The Willow Oaks, on the other hand, bud into leaves of almost needle-like narrowness and sharpness and of a bronzy hue; and as these develop they become greener, and, until a tree filled with half-grown leaves, wear a lively, twinkling, light and yet dignified air. On the borders of the ponds, and even along quite dry road-sides, there stands now and then a group of Bald Cypresses, their brilliant light green needles, not as yet more than half an inch long, and in vivid contrast with the yellowish brown bark. In certain places there are many Beeches, whose smooth pale gray mottled trunks add another conspicuous note of color, while their half-grown leaves are as vividly green as those of the Sweet Gum, but differ from them in quality as having a less shining surface. Hickories and Walnuts also increase the variety of the springtime pageant. Here and there a small Willow is pale green as to leaf, bright yellow as to its multitudinous catkins; Alders are richly emerald green along the road-side ditches; and Roses, although they give no sign of blossoming yet, spread their delicate leafage dark near the stem, much paler toward the tips of the branches.

It is in the large-leaved shoots of these trees that varieties of color are most conspicuous. They fringe the road-ways, or cover abandoned fields, mingling here with the blossoms of wild Azalea. Between the scarlet of the Maple shoots, the soft pinky gray of the White Oak leaves and the vivid stars of the Sweet Gum, many intermediate tones of color may be noted; and the lovely harmony is increased again by the profuseness with which two vines clamber about. These are Grape-vines and Cat-briers. Neither as yet bears leaves more than an inch in diameter; but the Grape-leaves are so exquisitely shaped and show such marvelous shades of green and gray and pink, and are so deliciously downy to the eye and touch,

that one wishes they might never grow any bigger. And the Cat-brier leaves are not merely emerald green, changing at the ends of the shoots into brightest bronze. They are absolutely like emeralds in quality as in tint. They do more than shine—they glow. When, driving late in the afternoon toward the west, the sunlight filters through them, and it seems as though the woods had been sprinkled with gems, blazing and scintillating with a gold-green radiance of their own.

New York, N. Y. *M. G. Van Rensselaer.*

Spring Coloring.

To the Editor of GARDEN AND FOREST:

Sir,—A note in GARDEN AND FOREST, April 26th, on the beauty of spring foliage, suggests another phase of spring beauty not often commented on, though it may be widely noticed. Our autumn foliage is justly celebrated for the brilliance and variety of its coloring, as is observed in the paragraph referred to, and the delicacy and variety of color in spring foliage is not far behind; but the spring color of vegetable-stems will bear comparison for interest and beauty with either. Taken in combination with the flowers of the various catkin-bearing plants now in bloom, some of these color-effects are wonderful. In a recent ride by rail down the Merrimac valley this fact was forcibly brought to my attention. In one place a close-set thicket of Poplars, in full bloom, made a soft gray cloud in the landscape, faintly tinted with green from the tree-stems, and offering besides a hint of pink, probably from the red so conspicuous at short range in the anthers at one stage of their development. Birches set thickly in the pastures made broad patches of clear reddish brown, and Alders spread a purple mantle over the swampy lands. The Maples showed clear gray stems, shading gradually toward their tips into a red, in some cases almost as vivid as that of their blossoms, now unfolding. Willows were of all shades between green-brown and golden.

Each tree of the orchard and forest has its color, as distinctive to the initiated as its foliage; but at no other time of the year does that brilliancy appear which is to be observed now, especially in a soft, slow rain, when the moisture brings out vividly the color, not only of the bark, but of every Moss and Lichen adorning it.

Some of the Willows show marvelous color-effects. One now in mind has at all seasons a clear golden bark; but some time in February, occasionally not until March, a change is apparent, subtle, indefinable, but unmistakable. From being just golden, and very beautiful, too, it becomes alive and shows to every onlooker that spring is on the way and sap has started, though snow covers the ground, and neither robin nor bluebird has shown himself.

Manchester, N. H. *M. A. M.*

Exhibitions.

The New York Flower Show.

MADISON SQUARE GARDEN was rather large for the Flower Show held there last week. On Friday, when the table and mantel decorations were in place, and when the fine weather brought out a large attendance, the garden looked fairly well filled; but, as a rule, the exhibition, although it contained many fine plants, looked meagre in the broad vacant spaces. There were fewer large decorative plants than usual, chiefly because exhibitors who are usually depended on for contributions of this sort had sent away great specimens by the car-load to Chicago; and yet the most liberal contributors to the Columbian Exhibition occupied a large portion of the space at the show. Again, it was too late in the season for many greenhouse-plants and too early for outdoor flowers, and this helps to account for a smaller exhibition than usual.

Of the Ferns, a collection of ten plants, shown by Richard Brett, gardener to J. B. Colgate, included good specimens of Scolopendrium pinnatum and Gymnogramme Martensii. There were also notable plants of the golden Davallia Mooreiana, and the darker D. Fijiensis major. In a large group of decorative plants, arranged for effect, for which J. M. Keller received first prize, some Kentias, a superb Phœnix rupicola and other Palms contrasted well with Pandanus Veitchii and the darker P. utilis, the only break in the body of green being the red Holly-like berries of Ardisia crenata and the flowers of Chrysanthemum frutescens. A perfect plant of Licuala grandis was shown by Messrs. Siebrecht & Wadley, and so was a fine specimen of the so-called golden variety of the Bourbon Palm. A mound of Rhododendrons, near the entrance, was contributed by W. Bayard Cutting. The plants were in vigorous health and covered with well-opened flowers, and they served an excellent purpose in giving the visitor that first good impression which goes far to make any flower show successful.

The Columbian Exposition has made heavy drafts on the great Orchid collections near this city, so that the display in this department was much smaller than it has been in former years. The plants were furnished mainly by Pitcher & Manda and Siebrecht & Wadley, although there was a small group of cut flowers brought by Mr. George Savage, gardener to W. S. Kimball, Esq., of Rochester, which were remarkable for size and perfection of form and color. Among these were Dendrobium macrophyllum and D. Findlayanum, one of the best of the early-blooming sorts; Maxillaria Sanderiana, one of the handsomest of the genus; and the rare Cypripedium Wallisi, often called the White Caudatum. Here, too, was a spray of the white Cattleya Skinneri, a fine variety of Gymbidium Lowii and of Phalænopsis grandis, Schiller's variety of Lælia elegans, and the rare little Epidendrum bicornutum. Among the plants was an admirable specimen of the beautiful African Ansellia, a Chysis bractescens with its wax-like flowers, and a remarkable plant of Cypripedium caudatum. The new Cypripedium Greyanum was well grown, and makes an attractive plant, and near it was the native C. Californicum, which was figured in the first volume of GARDEN AND FOREST. Other notable plants were a fine specimen of Cattleya Mossiæ Wagneri, C. Gravesiana and Dendrobium thyrsiflorum. Near these Orchids were some Anthurium seedlings which had been raised by Mr. A. P. Meredith, gardener to Colonel Cutting, of Pittsfield, Massachusetts. They were remarkable for the firm texture of the spathes and the depth of their coloring, which was a dark lustrous crimson.

Besides Mr. Cutting's group of Rhododendrons, a great deal of rich color was furnished by greenhouse Azaleas and Pitcher & Manda's exquisite group of Azalea mollis. Brighter still were the large beds of the common garden varieties of Hyacinths, Tulips and Narcissus. This part of the exhibition would have been more instructive if some of the species of Tulips had been shown, and some of the newer forms of Narcissus, which are so popular in Europe. But none of these were seen, nor did we observe any of the neat little Fritillarias or the late introductions among Irises. One of the most attractive exhibits was a group of Calceolarias, grown by Mr. Charles A. Webber, gardener of J. Hood Wright, Esq. These plants were very compact and vigorous, and covered with flowers having singular richness of color and delicacy of marking.

Perhaps the most valuable feature of the show, from an educational point of view, was a collection of hardy plants in flower. They were contributed by Messrs. Pitcher & Manda and Siebrecht & Wadley, but the two competing groups were massed together and surrounded by an edging of variegated Funkia. In the centre were some tall-flowering shrubs, a white flowered Azalea, a Forsythia and some of the early-flowering Magnolias. About the large white Azalea were some gorgeous red Pæonies, and the Forsythia was surrounded by tall Irises and Doronicums, which are the most effective among large early yellow flowers. After these came flowers of more humble habit, with low-growing or creeping plants at the border. The tasteful arrangement included at least a hundred different kinds of the most useful of the spring-flowering plants, like Primulas and Polyanthus of many colors, Iceland Poppies, two or three varieties of our native Trilliums, Birds'-foot Violets, masses of the prostrate yellow Alyssum saxatile and trailing Phloxes, P. subulata and P. amœna, hardy Candytuft, Rock Cress, the fragrant Daphne Cneorum, Gaillardias, Globe flowers, Saxifrages, Columbines, Spiræas and Hellebores, or Lenten Lilies, in variety. Altogether, it was a most inspiring suggestion of a May garden, interesting in itself, and doubly so as showing what might be accomplished in this direction with a little time and study and effort.

Besides those already noted, some of the principal prizes were awarded as follows:

To Pitcher & Manda for Tree Fern, group of flowering plants, Azalea Indica, Orchids, Hyacinths, Tulips and group of hardy flowering plants; to Siebrecht & Wadley for Palms, Cycads, Nepenthes and Cannas; to J. B. Colgate for Palms, Crotons and Ferns; to W. Siebrecht for Lilies and Dutch bulbs; to Ernst Asmus for several classes of Roses, Tulips and Carnations; to Dailledouze Brothers for Carnations and Mignonette; to T. J. Slaughter and John Anderson for Roses. A certificate of merit was awarded to J. Tailby & Sons for the new yellow Carnation, Henrietta Sargent, and Messrs. Warendorff & Son were successful in the competition for table decorations.

Notes.

The first shipment of California cherries left Sacramento for the east on May-day.

A most instructive feature in Mr. Gustave Kobbe's map of the suburbs of New York is the distinction it marks between good roads and bad, the former being indicated by red and the latter by black lines. It should be very useful to drivers and bicyclists, and also to pedestrians desirous of studying our local flora.

The editor of *Meehans' Monthly* suggests that in the search for improved vegetables the Rocky Mountain Thistle should not be forgotten. Dr. Coues has stated that the young leaves, which roll up into a head like that of Lettuce, are used as food by the Indians, and Mr. Meehan has seen these heads in Colorado as large as small cabbages. The Artichoke is the flower-head of a botanical relative of this Thistle, which Dr. Gray named Cnicus edulis.

The May number of the *Popular Science Monthly* contains an article by Professor Halsted on "Decay in the Apple-barrel," in which it is explained how the fruit is attacked by various molds and other fungi as well as by bacteria. The article is illustrated, and shows in a graphic way the progress of the different kinds of rot. The article has its practical side, in which it is shown how these diseases can be prevented or arrested by proper storage, and how the attacks of these various kinds of decay can be warded off by treatment of the fruit while it is on the tree and of the tree itself.

Writing of his boyhood in a small town in the north-eastern corner of Ohio, Mr. Howells says, in the last issue of *Scribner's Magazine:* "The portable steam saw-mills dropped down on the borders of the woods have long since eaten their way through and through them, and devoured every stick of timber in most places, and drunk up the water-courses that the woods once kept full; but at that time half the land was in the shadow of those mighty Poplars and Hickories, Elms and Chestnuts, Ashes and Hemlocks; and the meadows that pastured the herds of red cattle were dotted with stumps as thick as harvest stubble. Now there are not even stumps, the woods are gone, and the water-courses are torrents in spring and beds of dry clay in summer."

Last Friday two thousand pupils of the industrial schools of the city celebrated Arbor Day in the concert hall of Madison Square Garden. The exercises were arranged by the Kindergarten and Potted-plant Association, of which Mrs. George J. Gould is president, and included an address by Mr. C. H. Allen, with some practical directions for the care of potted plants by Mr. Samuel Henshaw. Through the courtesy of the managers of the Flower Show, the children visited the exhibition. A potted plant was presented to each child, for the successful cultivation of which prizes will be awarded in the fall. More than a hundred premiums in money are offered by Mrs. Gould, and Mr. C. B. Weathered has offered a glass-window conservatory for the best-grown Chrysanthemum.

A bulletin of the Rhode Island Experiment Station, on the subject of Sea-weed, states that when this is used as a manure nothing is gained by composting it or allowing it to ferment. The best practice is to use it in its fresh state, either for plowing in or for the top-dressing of grass-lands, but since it contains seventy to eighty per cent. of water it will not pay to haul it a long way from the shore. Since it contains a comparatively large percentage of nitrogen and potash, it is not a well-balanced fertilizer, and needs to be supplemented by some material rich in phosphoric acid. It is preferred to stable-manure for growing Potatoes, since they are less liable to the disease known as scab than those grown on barnyard-manure. Sea-wrack shares with commercial fertilizers the conspicuous advantage of being free from seeds of weeds, spores of fungi and eggs of insects.

On the trial grounds of Peter Henderson & Co. white Roman Hyacinths were showing color on April 12th, and a few days later were fully open, the bulbs averaging six spikes each, and from eight to ten inches long. The colored Roman Hyacinths, blue, mauve, soft rose, dark pink and the new yellow, were about two weeks later in coming into bloom than the white. The yellow we do not consider much of an acquisition, but the blue and rose have good strong color, and are more attractive than when forced under glass. The white Italian sorts, known to the trade as "Red-skinned Romans," came into bloom with the colored varieties; and the flowers, though usually pure white when forced, in the open air are slightly suffused with a pleasing rosy flush. A dozen varieties of Polyanthus Narcissus were showing buds on April 22d, and Paper White, with its larger-flowered variety, Grandiflora, Grand Soliel d'Or, Double Roman, Constantinople, and the so-called Chinese Sacred Lily were in full bloom on May 2d. Notwithstanding the marked difference in the bulbs, the flowers of the last two seemed identical. The Polyanthus Narcissus flowers were altogether superior to the forced blooms we have seen this season. It is noteworthy that none of the bulbs mentioned had any other covering than the snow, although they are classed as unreliable in this climate.

Not long ago Professor F. A. Waugh wrote to the *Kansas Farmer* a statement which seemed to justify the general belief that white varieties of Grapes are not so hardy as black sorts. A tabulated record of two-year-old vines at the Oklahoma Experiment Station showed that 15.7 per cent. of the white varieties died, 26.4 of the red varieties, and only 7.2 per cent. of the black varieties. Professor Waugh did not claim that these figures were decisive as to the hardiness of Grapes of different colors, but they seemed to bear in the direction of the popular belief. In a late number of the Kansas *Industrialist*, Professor Mason, after stating that it is a risk to draw an inference from one season's behavior of any lot of young vines, showed that some of the white varieties, like the Green Mountain, were very hardy, and that the Delaware, a red Grape, was grown with success as far north as Minnesota. In order to show that the question of hardiness can be explained by a cause wholly independent of the color of the fruit, he classified vines of 100 varieties which have had a record of about five years on the grounds of the State College of Kansas, in accordance with their specific botanical relations, and from these figures he derives the interesting results that in Kansas fifty-two varieties out of 100 rank as tender; of these, forty-two have an infusion of the blood of Vitis vinifera, and six more are hybrids of V. æstivalis; in other words, more than eighty-two per cent. of the tender vines contained blood of V. vinifera and V. æstivalis, while less than eight per cent. of the tender ones are descended from parents with no other blood than that of V. Labrusca and V. riparia.

The Department of Agriculture has lately published a farmer's bulletin upon the so-called Russian Thistle, or Russian Cactus, which is really a Saltwort (Salsola Kali, var. Tragus). When young it is an innocent-looking plant, tender and juicy, but with the dry weather of August it sends out stiff branches covered with sharp spines, which harden as the plant increases in age. When the ground becomes frozen the November winds loosen the small roots, and the plant goes racing across the country like the western Tumble-weed, to which it is related, scattering seed as it goes, and stopping only when the wind falls, for there are few fences or forests to stop it in the Dakotas. It is always a weed, spreading and multiplying rapidly, flourishing to the exclusion of everything else. Its spines are so sharp and strong that it is difficult to drive a horse through a field where the plants abound, and in some places it is necessary to wind leathers about the horses' legs while at work. Dogs of hunters are often injured by these sharp spines, and threshers cannot get gloves thick enough to protect their hands when working. It was introduced into South Dakota some fifteen years ago, probably in a small quantity of Flax-seed which was then imported from Europe. The weeds cover new territory with wonderful rapidity, as they are carried miles in a single season by the wind. Where a few plants were first seen four or five years ago, every spot of land where the sod has been broken is now occupied. Some 30,000 square miles between the Missouri and James rivers, in South Dakota, are infested, and there are scattered localities in the states further east where the plant is not yet so abundant as to cause alarm. In the infested area more than 640,000 acres are devoted to Wheat, and as the damage from the weed cannot be less than five bushels an acre, at the minimum price of fifty cents a bushel, this means a loss to the farmers in the two Dakotas of $1,600,000, while the loss to other crops, injuries from spines, and fires caused by the plants leaping over fire-brakes, will increase the total damage to something more than $2,000,000 for the year 1892. The suggested remedies are based on the fact that the weed is an annual with short-lived seeds, so that if cut at the proper time and prevented from going to seed for two years it can be exterminated. It is suggested that a Russian Thistle should be placed in each school-house, so that pupils might become familiar with it, and that they should be taught to kill it wherever found as they would kill a rattlesnake. Of course, no more land should be broken up than can be properly cultivated, and every farmer should keep down the weeds on his own farm, and insist that his neighbor should do likewise.